My NASA Data - STEM Career Connections

ENGINEERING: Civil Engineer

Education

Civil engineers require a bachelor’s degree in civil engineering, in one of its specialties, or in civil engineering technology. To promote to management positions, normally a graduate degree and licensure is needed. License requirements vary by state, civil engineers normally must be licensed if they are employed by a public service.

Related Fields

- Architectural and Engineering Managers Link
- Engineering Teachers, Postsecondary Link
- Energy Engineers Link
- Logistic Engineers Link

Work Description

Civil engineers design, develop, and construct community projects that serve the general public such as roads, bridges, damns, tunnels, water supply systems, etc. The designs include but are not limited to many fields such as hydraulics, thermodynamics, or nuclear physics.

Why is this job Important?

As temperatures rise, ground covered with permafrost (any ground cover remaining at or below 0°C for two or more years) begins to thaw. This can cause unstable conditions for community infrastructure affecting developers, businesses, residents, and governments. Additionally, poorly engineered buildings also accelerate permafrost thaw by trapping heat under the buildings leading to issues with unstable foundations.

Civil Engineers also develop and implement plans for communities to mitigate the effects natural disasters. They do this by developing infrastructure solutions and plans for events such as flooding, earthquakes, hurricanes, and landslides. For example, they help communities plan for storm surges such as those that occur from hurricanes or major precipitation events. They design devices to enhance the resilience of buildings and communities.

Salary Range

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$75,000 - $100,000

NASA Connections

Job Title NASA Examples:

- Facilities Engineering
- Aerospace
- Construction Engineers
- Geotechnical Engineers
- Structural Engineers
- Transportation Engineers

NASA Career Links:

- NASA Careers Link
- NASA Internships & Fellowships Pathways Link
- NASA Student Volunteer Program Link
- Working for NASA Link